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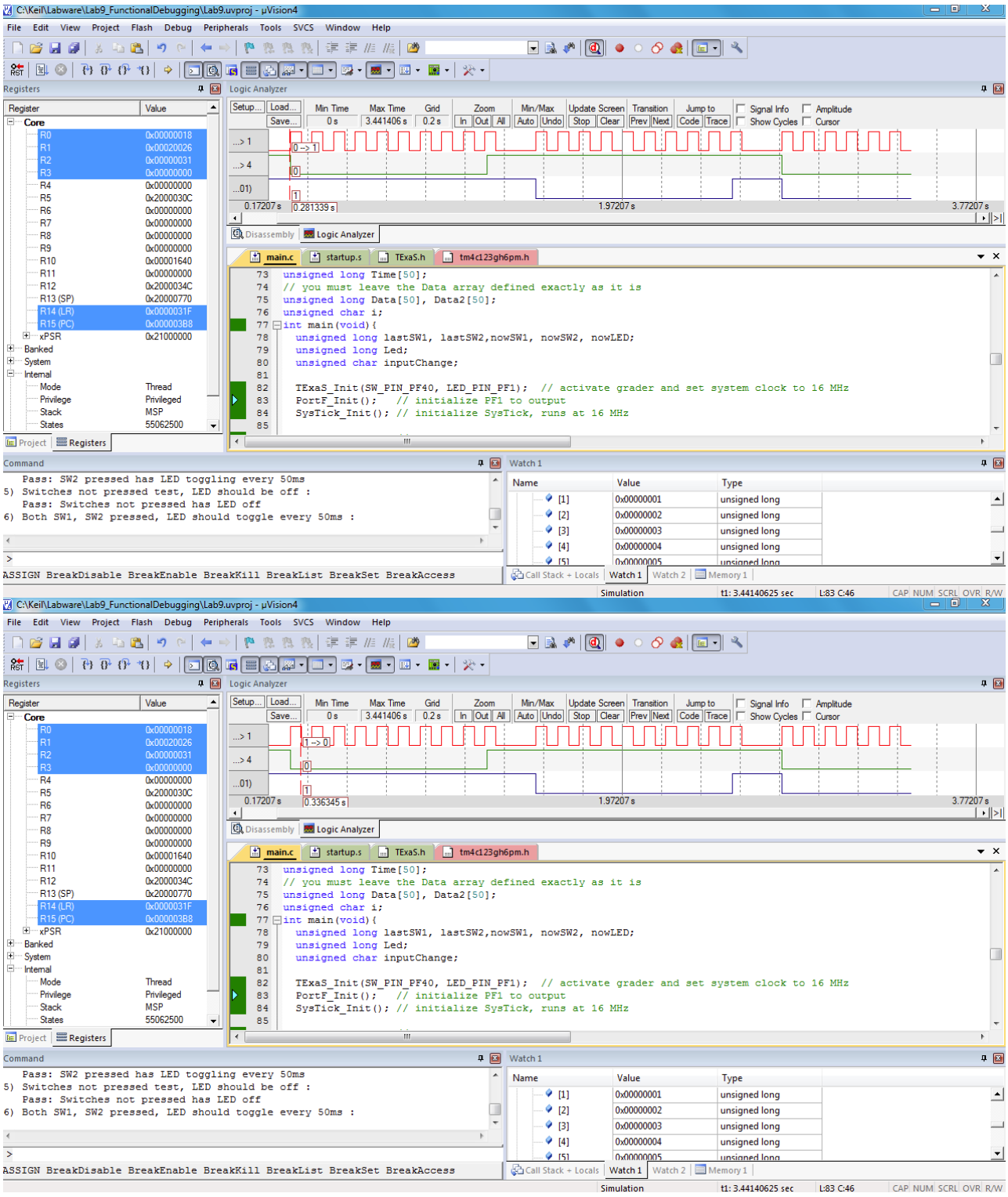
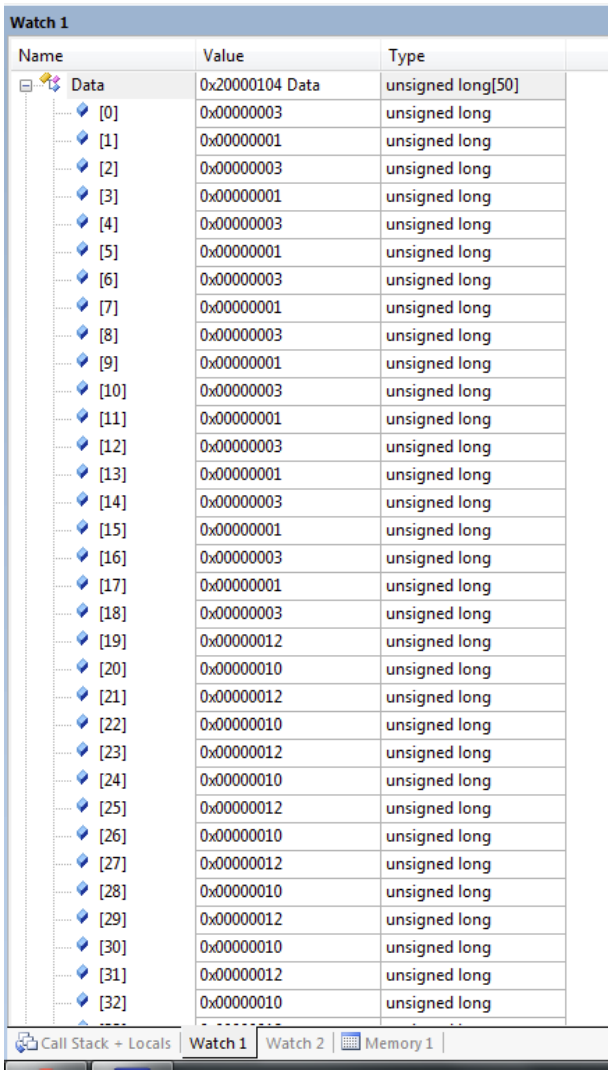
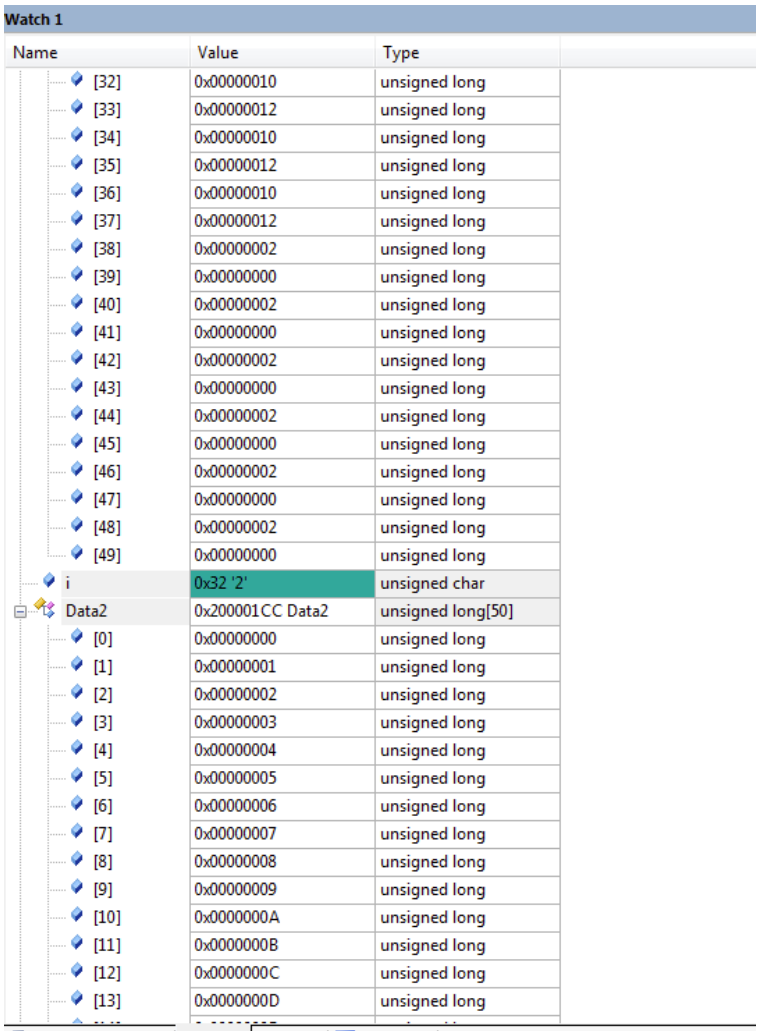
lab9 help? - test6 fails but pf1 led toggles at correct rate when sw1 or sw2 are pressed (low)



Command

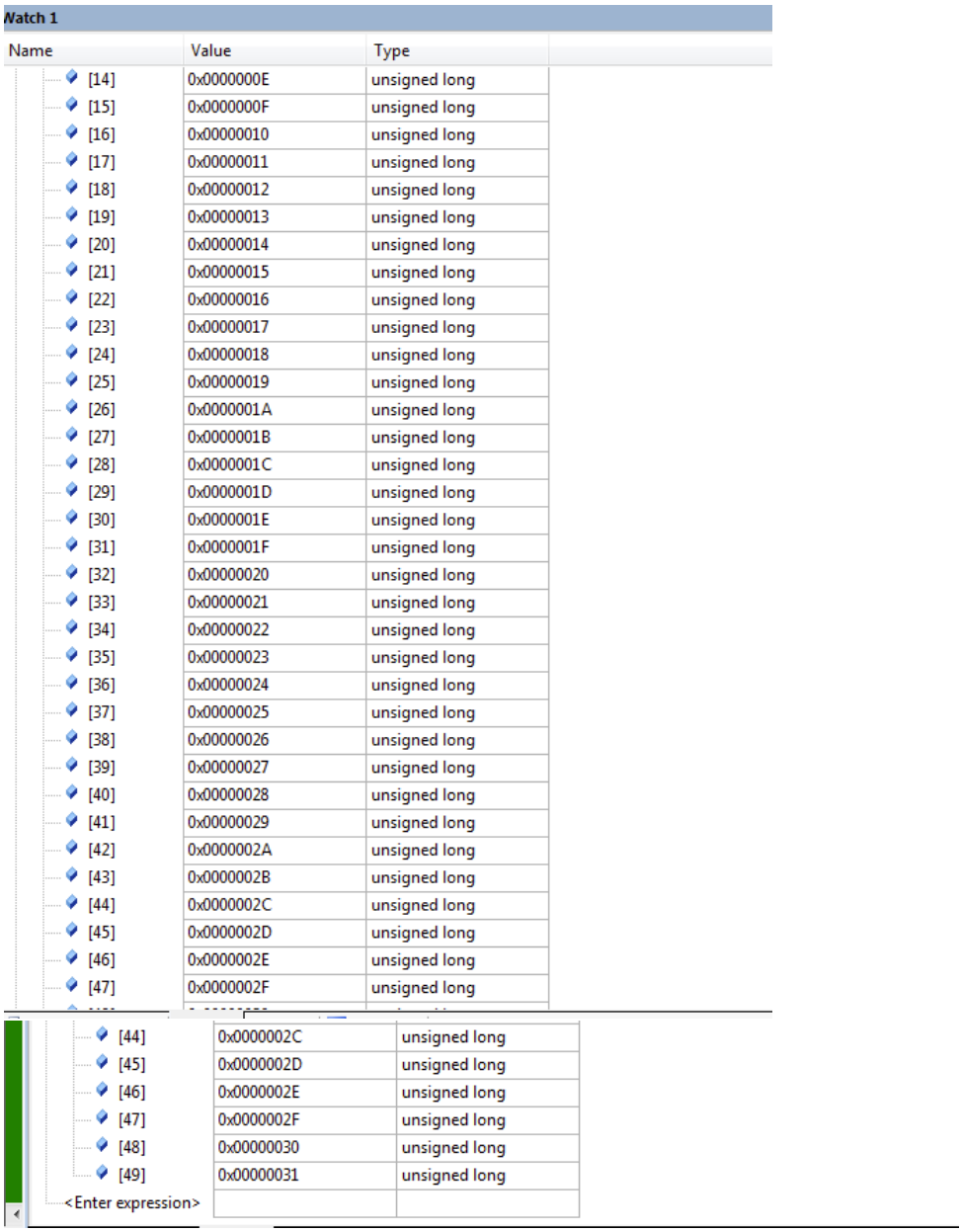
```
Start grading Lab 9
Clock rate appears to be : 16 MHz
Running 8 tests
0) Initialization tests :

 - Verifying PORTF configuration...
   Pass: PORTF DEN bits for PF4, PF1, PF0 are high
   Pass: PORTF DIR bits for PF4, PF0 are low
   Pass: PORTF DIR bit for PF1 is high
   Pass: PORTF PF4, PF0 PUR bits are high
   Pass: PORTF PF1 PUR bit is low
   Pass: PORTF PF4, PF1, PF0 PDR bits are low
   Pass: PORTF PF4, PF1, PF0 AFSEL bits are zero
   Pass: PORTF PF4, PF1, PF0 AMSEL bits are zero
   Pass: PORTF PF4, PF1, PF0 PCTL bits are zero
   TExaS found Data array at 0x20000104
1) Switches not pressed test, LED should be off :
   Pass: Switches not pressed has LED off
2) SW1 pressed, LED should toggle every 50ms :
   - NOTE: due to a bug in Keil, expect the board to run a little slower.
   - Approximate time between toggles: 55 ms
   Pass: Heartbeat appears to be working properly.
   Pass: SW1 pressed has LED toggling every 50ms
3) Switches not pressed test, LED should be off :
   Pass: Switches not pressed has LED off
4) SW2 pressed, LED should toggle every 50ms :
   - NOTE: due to a bug in Keil, expect the board to run a little slower.
   - Approximate time between toggles: 52 ms
   Pass: Heartbeat appears to be working properly.
   Pass: SW2 pressed has LED toggling every 50ms
5) Switches not pressed test, LED should be off :
   Pass: Switches not pressed has LED off
6) Both SW1, SW2 pressed, LED should toggle every 50ms :
```


Watch 1
Name
Value
Type
Data
0x20000104 Data
unsigned long[50]
[0] 0x00000003 unsigned long
[1] 0x00000001 unsigned long
[2] 0x00000003 unsigned long
[3] 0x00000001 unsigned long
[4] 0x00000003 unsigned long
[5] 0x00000001 unsigned long
[6] 0x00000003 unsigned long
[7] 0x00000001 unsigned long
[8] 0x00000003 unsigned long
[9] 0x00000001 unsigned long
[10] 0x00000003 unsigned long
[11] 0x00000001 unsigned long
[12] 0x00000003 unsigned long
[13] 0x00000001 unsigned long
[14] 0x00000003 unsigned long
[15] 0x00000001 unsigned long
[16] 0x00000003 unsigned long
[17] 0x00000001 unsigned long
[18] 0x00000003 unsigned long
[19] 0x00000012 unsigned long
[20] 0x00000010 unsigned long
[21] 0x00000012 unsigned long
[22] 0x00000010 unsigned long
[23] 0x00000012 unsigned long
[24] 0x00000010 unsigned long
[25] 0x00000012 unsigned long
[26] 0x00000010 unsigned long
[27] 0x00000012 unsigned long
[28] 0x00000010 unsigned long
[29] 0x00000012 unsigned long
[30] 0x00000010 unsigned long
[31] 0x00000012 unsigned long
[32] 0x00000010 unsigned long
Call Stack + Locals
Watch 1
Watch 2
Memory 1



Watch 1

Name	Value	Type
[32]	0x00000010	unsigned long
[33]	0x00000012	unsigned long
[34]	0x00000010	unsigned long
[35]	0x00000012	unsigned long
[36]	0x00000010	unsigned long
[37]	0x00000012	unsigned long
[38]	0x00000002	unsigned long
[39]	0x00000000	unsigned long
[40]	0x00000002	unsigned long
[41]	0x00000000	unsigned long
[42]	0x00000002	unsigned long
[43]	0x00000000	unsigned long
[44]	0x00000002	unsigned long
[45]	0x00000000	unsigned long
[46]	0x00000002	unsigned long
[47]	0x00000000	unsigned long
[48]	0x00000002	unsigned long
[49]	0x00000000	unsigned long
i	0x32 '2'	unsigned char
Data2	0x200001CC Data2	unsigned long[50]
[0]	0x00000000	unsigned long
[1]	0x00000001	unsigned long
[2]	0x00000002	unsigned long
[3]	0x00000003	unsigned long
[4]	0x00000004	unsigned long
[5]	0x00000005	unsigned long
[6]	0x00000006	unsigned long
[7]	0x00000007	unsigned long
[8]	0x00000008	unsigned long
[9]	0x00000009	unsigned long
[10]	0x0000000A	unsigned long
[11]	0x0000000B	unsigned long
[12]	0x0000000C	unsigned long
[13]	0x0000000D	unsigned long



Watch 1

Name	Value	Type
[14]	0x0000000E	unsigned long
[15]	0x0000000F	unsigned long
[16]	0x00000010	unsigned long
[17]	0x00000011	unsigned long
[18]	0x00000012	unsigned long
[19]	0x00000013	unsigned long
[20]	0x00000014	unsigned long
[21]	0x00000015	unsigned long
[22]	0x00000016	unsigned long
[23]	0x00000017	unsigned long
[24]	0x00000018	unsigned long
[25]	0x00000019	unsigned long
[26]	0x0000001A	unsigned long
[27]	0x0000001B	unsigned long
[28]	0x0000001C	unsigned long
[29]	0x0000001D	unsigned long
[30]	0x0000001E	unsigned long
[31]	0x0000001F	unsigned long
[32]	0x00000020	unsigned long
[33]	0x00000021	unsigned long
[34]	0x00000022	unsigned long
[35]	0x00000023	unsigned long
[36]	0x00000024	unsigned long
[37]	0x00000025	unsigned long
[38]	0x00000026	unsigned long
[39]	0x00000027	unsigned long
[40]	0x00000028	unsigned long
[41]	0x00000029	unsigned long
[42]	0x0000002A	unsigned long
[43]	0x0000002B	unsigned long
[44]	0x0000002C	unsigned long
[45]	0x0000002D	unsigned long
[46]	0x0000002E	unsigned long
[47]	0x0000002F	unsigned long
[48]	0x00000030	unsigned long
[49]	0x00000031	unsigned long
<Enter expression>		

code snippet - think it meets guidelines:

main.c | startup.s | TExaS.h | tm4c123gh6pm.h

```
90  while(i < 50){
91    Led = GPIO_PORTF_DATA_R;   // read previous
92    nowSW1 = Led & 0x10;
93    nowSW2 = Led & 0x01;
94    nowLED = Led & 0x02;
95    inputChange = 0x00;
96    if ((lastSW1 != nowSW1) || (lastSW2 != nowSW2)) { //if switch 1 or 2's input value changed record data
97        //Data[i] = Led & 0x13; //only record bits 4,1,0 (PF4,PF1,PF0)
98        //i++;
99        inputChange = 0x01;
100       lastSW1 = nowSW1;
101       lastSW2 = nowSW2;
102   }
103   if ((nowSW1 == 0x00000000) || (nowSW2 == 0x00000000)) { //if switch 1 or 2's button is pressed
104     Led = Led^0x02;            // toggle red LED
105     GPIO_PORTF_DATA_R = Led;   // output
106     Led = GPIO_PORTF_DATA_R;   // record data since PF1 output just changed
107     Data[i] = Led & 0x13; //only record bits 4,1,0 (PF4,PF1,PF0)
108     Data2[i] = i;
109     i++;
110     Delay();
111   }
112   else { //neither switch 1 or switch 2 are pressed so turn OFF LED PF1 output
113     GPIO_PORTF_DATA_R &= ~0x02; //output PF1 red LED = 0 when neither button pressed
```

lab9

Just now by Karen West

the students' answer, *where students collectively construct a single answer*

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followup discussions *for lingering questions and comments*